



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

EW

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/071,999   | 02/06/2002  | Bernard Aspar        | 034299-382          | 3061             |
| 7590   | 02/24/2004  |                      | EXAMINER            |                  |
| Robert E.Krebs<br>Thelen Reid & Priest LLP<br>PO Box 640640<br>San Jose, CA 95164-0640 |             |                      | RICHARDS, N DREW    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2815                |                  |

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/071,999             | ASPAR ET AL.        |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | N. Drew Richards       | 2815                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 23 December 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 20-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 20-23, 26, 28-32 and 34-36 is/are rejected.

7)  Claim(s) 24, 25, 27 and 33 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 26 June 2003 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. 09/413483.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date . . . . .  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 6/26/03. These drawings are acceptable as replacement formal drawings.

### ***Claim Objections***

2. Claim 20 is objected to because of the following informalities: line 6 recites "at least one zone (2)" where it should recite "at least one zone (9)" as the zone is labeled numeral 9 in line 3. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 line 6 recites "at least one zone." This claim is indefinite as it is not clear whether the zone previously claimed in line 3 or whether a different zone is being claimed.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 20-23, 26, 28-32 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Morris et al. (U.S. Patent No. 5,369,042).

Morris et al. disclose in figure 2e a thin layer integral with a support, the thin layer being of a semiconductive material made insulating by ion implantation except for at least one zone that allows a vertical electrical connection through the entire thickness of the thin layer electrically connecting the support to a face of the thin layer opposite to the support, wherein the layer and at least one zone substantially have the same thickness. Thin layer 52,64 is semiconductive and portions 118 are made insulating by implanting oxygen such that the central portion (at least one zone) remains as a vertical electrical connection through the entire thickness of the thin layer. The thin layer is integral with support 50 and electrically connects the support 50 to a face of the thin layer 52,64 opposite to the support. The layer 52,64 and at least one zone substantially have the same thickness as the at least one zone is the central portion that allows vertical connection. This central portion is the same region as layer 52,64 and thus has the same thickness.

With regard to claim 21, the thin layer comprises a multitude of zones 52,64 distributed over the entire surface.

With regard to claim 22, the thin layer comprises one zone to constitute at least one conductive path.

With regard to claim 23, the thin layer is made integral with a support 50 through an intermediate conductive surface (bottom surface of layers 52,64).

With regard to claim 26, the bottom surface of layers 52,64 are considered conductive bonding materials as they are conductive and they bond the bulk of layers 52,64 to support 50. The limitation of deposition is a product by process limitation that is not structurally distinguishing over the prior art.

With regard to claim 28, the thin layer is made integral with a support 50 through the use of a brazing material (bottom surface of layers 52,64).

With regard to claim 29, the brazing material is based on indium as layers 52,64 are disclosed as being such materials as InGaAs, InP, or GaInP.

With regard to claim 30, the material of the thin layer is GaAs.

With regard to claim 31, the support is disclosed as being silicon as on column 6 lines 15-20, Morris et al. disclose that the device may be a silicon device and would therefore be formed upon a silicon substrate.

With regard to claim 32, the thin layer is made integral with a support 50 through an intermediate conductive interface (the interface between conductive material 52,64 and support 50).

With regard to claim 34, the thin layer is made integral with a support 50 through the use of a brazing material (bottom surface of layers 52,64).

With regard to claim 35, the material of the thin layer is GaAs.

With regard to claim 36, the support is disclosed as being silicon as on column 6 lines 15-20, Morris et al. disclose that the device may be a silicon device and would therefore be formed upon a silicon substrate.

***Allowable Subject Matter***

7. Claims 24, 25, 27, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments filed 12/23/03 have been fully considered but they are not persuasive. Applicant argues that Morris et al. teaches zones 52 and 64 and portion 118 having a different thickness. This is irrelevant to the invention as claimed. The invention as claimed, specifically in claim 20, does not require the insulative portion to have the same thickness as the layer or the zone that allows vertical electrical connection but instead merely requires the remaining electrically conductive portion to have the same thickness as the thin layer, which is taught by Morris et al. as explained in the rejection above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (571)

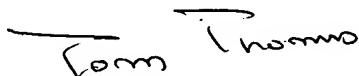
Art Unit: 2815

272-1736. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
NDR

  
Tom Thomas  
Patent Office  
Supervisory Patent Examiner  
703-272-1664  
703-272-2800